

Claim 1 has been amended as follows:

1. (Thrice Amended) A cooling stage for a semiconductor substrate comprising:

a pedestal having a substantially planar top surface,

a first plurality of circular grooves concentrically formed in said top surface, and

a second plurality of linear grooves formed in radial directions emanating from a center of said top surface in fluid communication with each and every one of said first plurality of circular grooves allowing a cooling fluid to flow therethrough when said semiconductor substrate is positioned on said top surface of the pedestal, said first plurality of circular grooves and said second plurality of linear grooves each having a width between about 1 mm and about 7 mm, and a depth between about 1 mm and about 7 mm.

Claim 8 has been amended as follows:

8. (Thrice Amended) A method for cooling a semiconductor substrate comprising the steps of:

providing a cooling stage comprising a wafer pedestal equipped with a grooved top surface thereon, said grooved top

surface comprises a first plurality of circular grooves concentrically formed in said top surface and a second plurality of linear grooves formed in radial directions emanating from a center of said top surface in fluid communication with each and every one of said first plurality of circular grooves, said first plurality of circular grooves and said second plurality of linear grooves each having a width between about 1 mm and about 7 mm, and a depth between about 1 mm and about 7 mm,

positioning a heated semiconductor substrate on said grooved top surface,

flowing a cooling liquid through a cooling channel in said wafer pedestal to carry away heat transferred to said grooved top surface, and

flowing a cooling gas through said first and second plurality of circular and linear grooves to carry away heat from a backside of said heated semiconductor substrate.

Claim 12 has been amended as follows:

12. (Twice Amended) A method for cooling a semiconductor substrate according to claim 8 further comprising the step of providing said grooved top surface with said first plurality of circular grooves and said second plurality of linear grooves each having a width between about 3 mm and about 5 mm, and a depth of between about 1 mm and about 3 mm.

REMARKS

Thorough examination and careful review of the application by the Examiner is noted and appreciated.

Claims 1-3, 5, 8-10, 12-16 and 18-20 are pending in the application.

Claims 16, 18, 19 and 20 have been cancelled without prejudice and withdrawn from further consideration by the Examiner.

Claims 1-3, 5, 8-10 and 12-15 are pending in the application.